

BASIS FOR THE AMENDMENT

Claims 1-8 and 10-20 have been canceled.

Claim 8 was amended as supported by paragraphs [0067] and [0068] of the published application.

New Claims 21-26 are supported by original Claims 2-7.

New Claim 27 is supported by original Claims 1 and 8 and by paragraphs [0081] and [0082] of the published application.

New Claims 28-34 are supported by original Claims 2-7 and 9.

New Claims 35-38 are supported by original Claims 1, 8, 10 and 11.

New Claim 39 is supported by paragraphs [0060] to [0063] of the published application.

New Claims 40-42 are supported by paragraph [0064] of the published application.

New Claims 43-44 are supported by paragraph [0065] of the published application.

New Claims 45-46 are supported by paragraph [0069] of the published application.

No new matter is believed to have been added by entry of this amendment. Entry and favorable reconsideration are respectfully requested.

Upon entry of this amendment Claims 8, 9 and 21-44 will now be active in this application.

REMARKS

Applicants respectfully request reconsideration of the application, as amended, in view of the following remarks.

Applicants wish to thank Examiner Niland for the helpful and courteous discussion with Applicants' Representative on September 12, 2007. The claims as amended were discussed.

The rejection of Claims 1-20 under 35 U.S.C. § 103(a) as obvious over US 5959027 in view of US 4046729 is respectfully traversed.

The present invention as set forth in **amended Claim 8** relates to a process for preparing a primary dispersion, said process comprising:

reacting the following components a), b1), **and c)** and optionally b2), optionally b3), and optionally b4) in the presence of water, thereby obtaining an aqueous primary dispersion, which comprises at least one polyurethane;

wherein

a) is at least one polyisocyanate,

b1) is at least one polyol comprising a structural unit $[-CH_2-CH_2-O-]$ one or more times, wherein said structural unit $[-CH_2-CH_2-O-]$ is obtained from a synthesis component selected from the group consisting of ethylene glycol, polyethylene glycol having a molar mass of between 106 and 2000, and ethylene oxide,

b2) is at least one polyol other than b1),

b3) is at least one compound containing at least two isocyanate-reactive groups selected from the group consisting of thiol groups and primary and secondary amino groups,

b4) is at least one monofunctional monomer having an isocyanate-reactive group, and

c) is at least one ionic or potentially ionic synthesis component,

wherein

the fraction of the structural units $[-CH_2-CH_2-O-]$, calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight, and

the fraction of the structural units $[-CH_2-CH_2-O-]$, calculated at 44 g/mol, in the sum of the components a) + b1) + b2) + b3) + b4) + c) is at least 3% by weight.

New Claim 27 relates to a process for preparing a primary dispersion, said process comprising:

reacting the following components a), b1), and optionally b2), optionally b3), optionally b4) and optionally c) in the presence of water, **thereby obtaining an aqueous primary dispersion, which comprises at least one polyurethane;**

wherein

first all components are mixed with water, to obtain an emulsion having a water phase,

then said emulsion is heated,

after the reaction temperature has been reached, a catalyst is added via the water phase of said emulsion, and

wherein

a) is at least one polyisocyanate,

b1) is at least one polyol comprising a structural unit $[-CH_2-CH_2-O-]$ one or more times, wherein said structural unit $[-CH_2-CH_2-O-]$ is obtained from a synthesis component selected from the group consisting of ethylene glycol, polyethylene glycol having a molar mass of between 106 and 2000, and ethylene oxide,

b2) is at least one polyol other than b1),

b3) is at least one compound containing at least two isocyanate-reactive groups selected from the group consisting of thiol groups and primary and secondary amino groups, b4) is at least one monofunctional monomer having an isocyanate-reactive group, and c) is at least one ionic or potentially ionic synthesis component, wherein

the fraction of the structural units $[-CH_2-CH_2-O-]$, calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight, and

the fraction of the structural units $[-CH_2-CH_2-O-]$, calculated at 44 g/mol, in the sum of the components a) + b1) + b2) + b3) + b4) + c) is at least 3% by weight.

It is an object of the present invention to provide primary dispersions which comprise polyurethane, which are finely divided without the use of high shear forces, and which make it possible not only for the raw materials to be emulsified finely but also for the products to be dispersed. See page 2, 1st full paragraph of the specification.

However, US 5959027 and US 4046729, alone or in combination fail to disclose or suggest the process of producing the aqueous primary dispersions as claimed in Claims 8 and 27.

Claim 8 requires the presence of component c): **at least one ionic or potentially ionic synthesis component.** US 5959027 and US 4046729 fail to disclose a process in which such component c) is used.

US 5959027 discloses at col. 5, lines 57-60: "If the prepolymer is self-emulsifying by inclusion of emulsifying nonionic, cationic, or anionic groups, then an external surfactant may or may not be necessary."

This paragraph refers to a prepolymer which is emulsified in water and further reacted with a chain-extending agent (col. 6, lines 28-30) to yield the final polymer.

In contrast, the final polymer according an embodiment of the present invention is

prepared homogeneously and afterwards emulsified in water. See paragraph [0069] of the published application. See also newly added Claims 45 and 46.

Accordingly, the prepolymer of US 5959027 is different from the final polymer obtained in the present invention. Thus, col. 5, lines 57-60 have no relevance for Claim 8.

New Claim 27 requires a specific sequence of the reaction. However, US 5959027 and US 4046729 fail to disclose or suggest **that first all components are mixed with water, to obtain an emulsion having a water phase, then said emulsion is heated, after the reaction temperature has been reached, a catalyst is added via the water phase of said emulsion.**

The polyurethanes obtained according to the process of the present invention are dispersible in water and form a finely emulsified dispersion on stirring the oil phase into water. **A minimum amount of a hydrophilic compound**, i.e. the polyol bearing oxyethyl moieties, **is necessary in order to ensure emulsification of the polyurethane.** Accordingly, the fraction of the structural units $[-CH_2-CH_2-O-]$, calculated at 44 g/mol, in the sum of the components a) + b1) + b2) + b3) + b4) + c) is **at least 3% by weight**.

On the other hand, in order to optimize the particle size, the presence of the polyurethanes according to the present invention **at the interface** between the water and the oil phase has to be achieved, i.e. neither in the water phase nor in the oil phase. In case the hydrophilic compound is too hydrophilic, e.g. 100 % oxyethyl moieties, the polyurethane is drawn into the water phase. If the hydrophilic group is not hydrophilic enough, e.g. a 100% polypropylene glycol, the polyurethane remains in the oil phase.

Hence, an optimum particle size is achieved if a well chosen balance between **hydrophilic oxyethyl- and hydrophobic propylene glycol** moieties is established.

Accordingly, **the fraction of the structural units $[-CH_2-CH_2-O-]$, calculated at 44 g/mol, in the polyol b1) is from 10 to 90% by weight.**

However, US 5959027 and US 4046729, alone or in combination fail to disclose or

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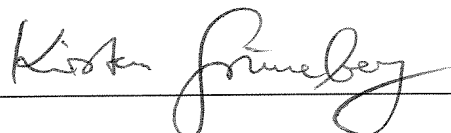
suggest the excellent emulsification of a polyurethane in an aqueous primary dispersion as claimed having **a fraction of the structural units $[-CH_2-CH_2-O-]$ in the polyol b1) of from 10 to 90% by weight, and a fraction of the structural units $[-CH_2-CH_2-O-]$ in the sum of the components a) + b1) + b2) + b3) + b4) + c) of at least 3% by weight.**

Therefore, the rejection of Claims 1-20 under 35 U.S.C. § 103(a) as obvious over US 5959027 in view of US 4046729 is believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of this rejection is respectfully requested.

This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

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